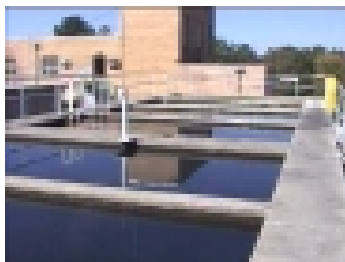
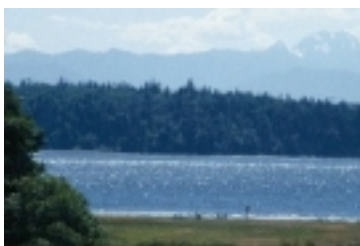


USEPA Perspective
Infrastructure in Context:
Public Health Protection & Public Policy



AWWA 2001 Infrastructure Conference and Exhibition

March 11, 2001

Orlando, FL

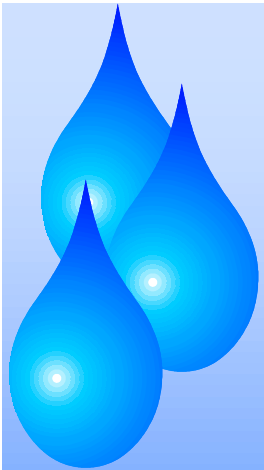
Peter E. Shanaghan, Team Leader

Drinking Water Utilities Team

Office of Ground Water and Drinking Water

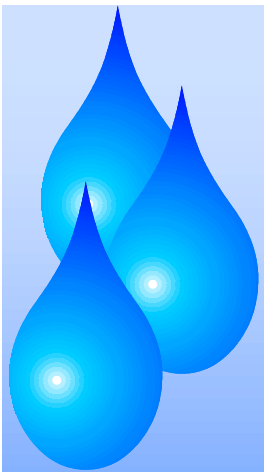
USEPA

Washington, DC 20460

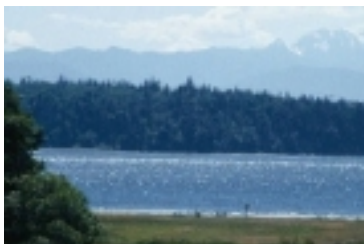


Major Issues

- **Enhancing Public Health Protection**
- **Achieving Economic Efficiency**
- **Engaging Customers as Partners**
- **Planning for Sustainability**



Multiple Barriers of Public Health Protection



**Source
Protection**



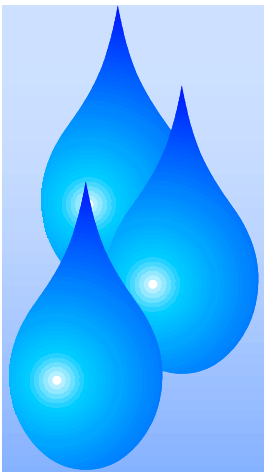
Treatment



Distribution



**Informed
Customer**



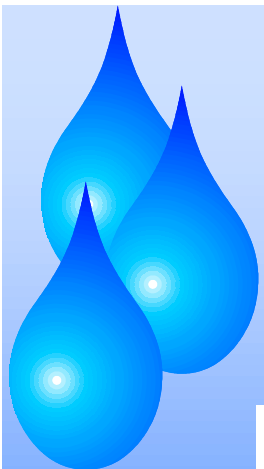
Infrastructure in Context



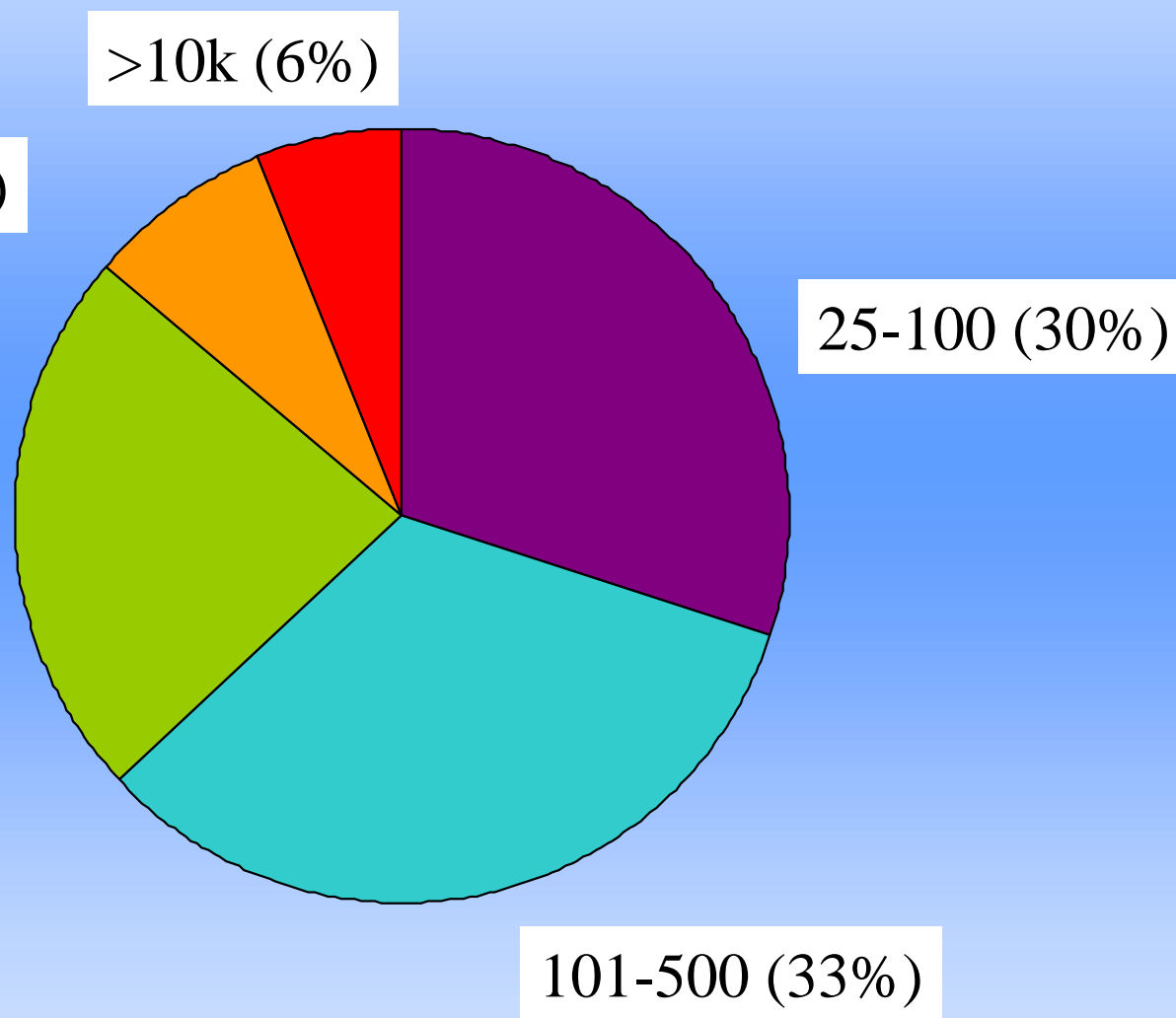
Physical Infrastructure



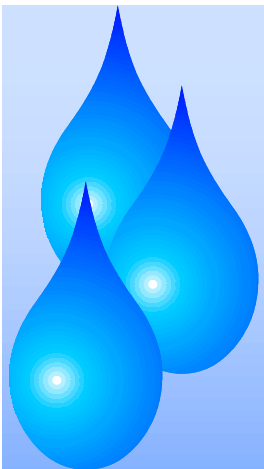
**Institutional & Organizational
Infrastructure**



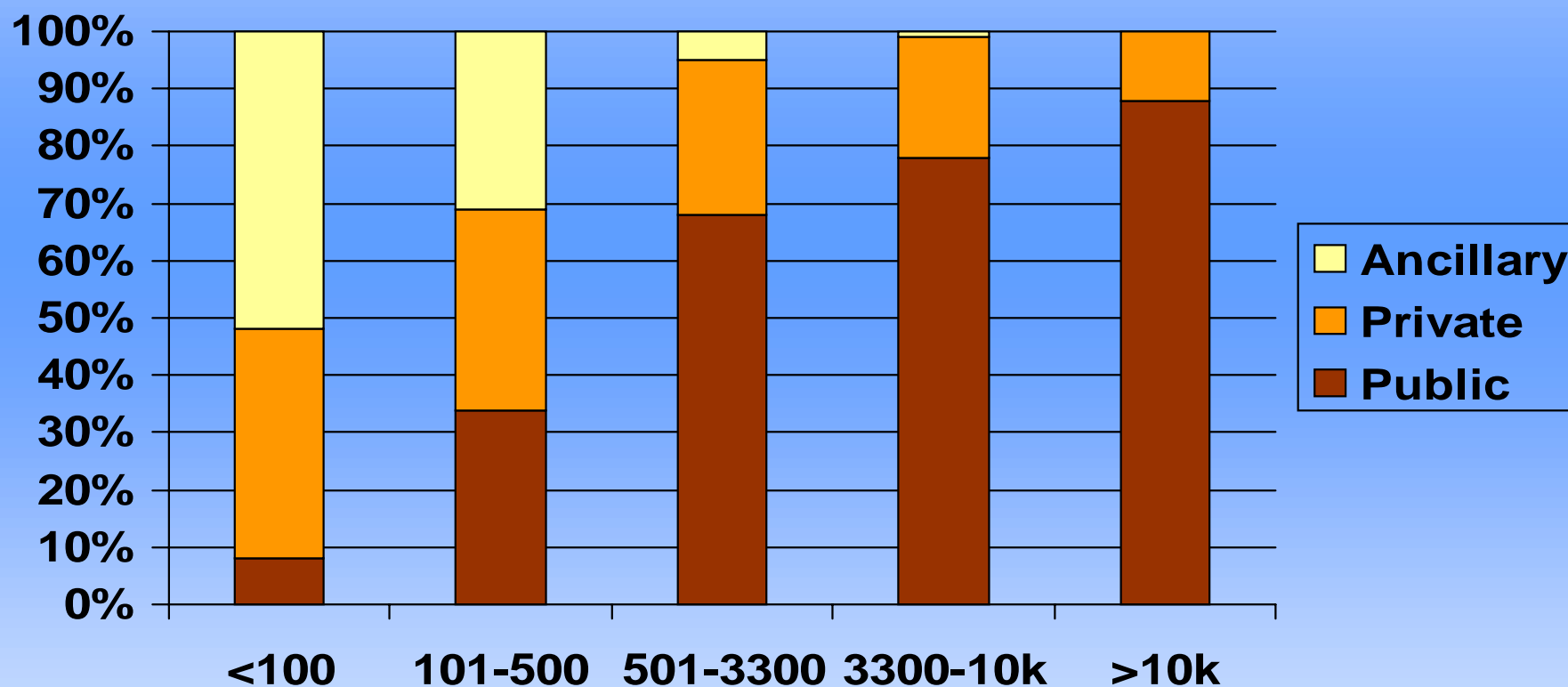
Community Water Systems: Size Distribution by Population Served

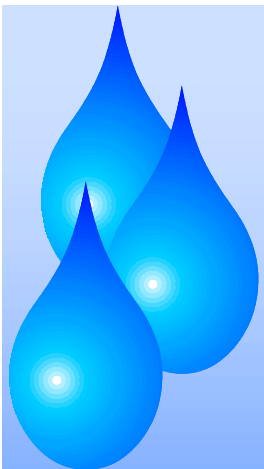


54,000 CWS's

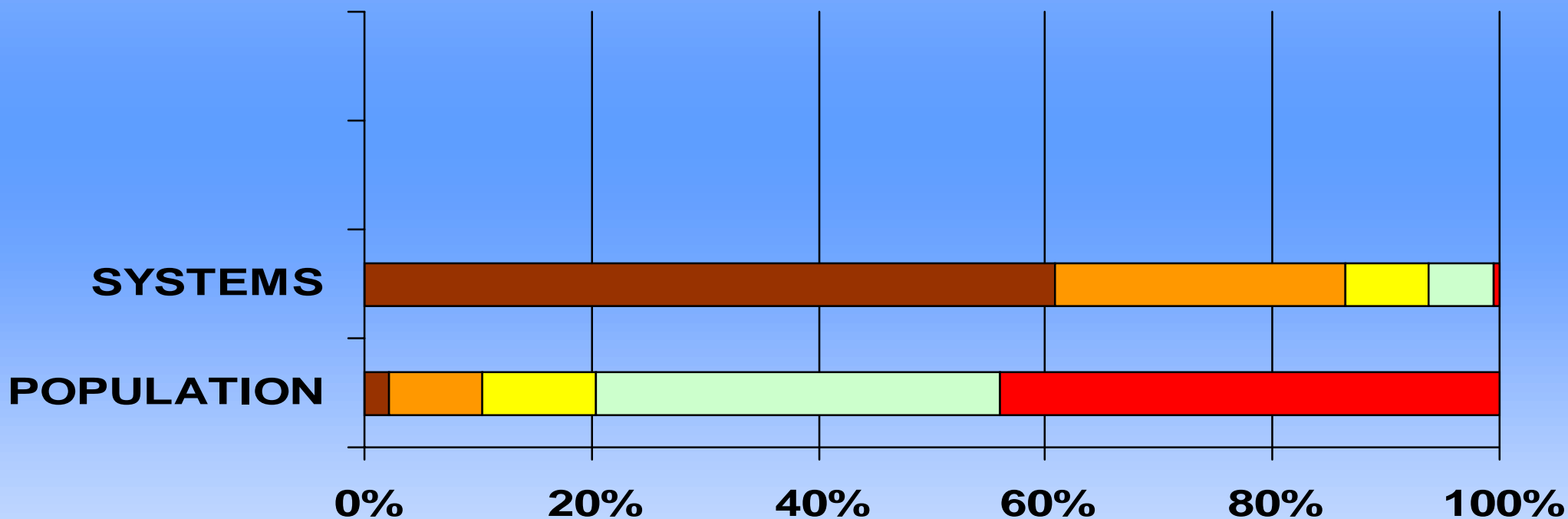
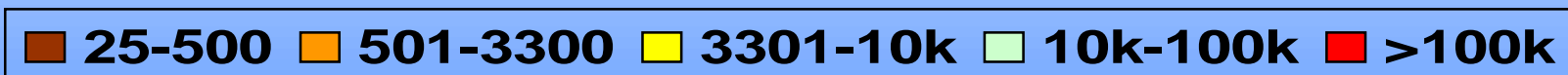


Ownership Profile of Community Water Systems by Population Size Category Served



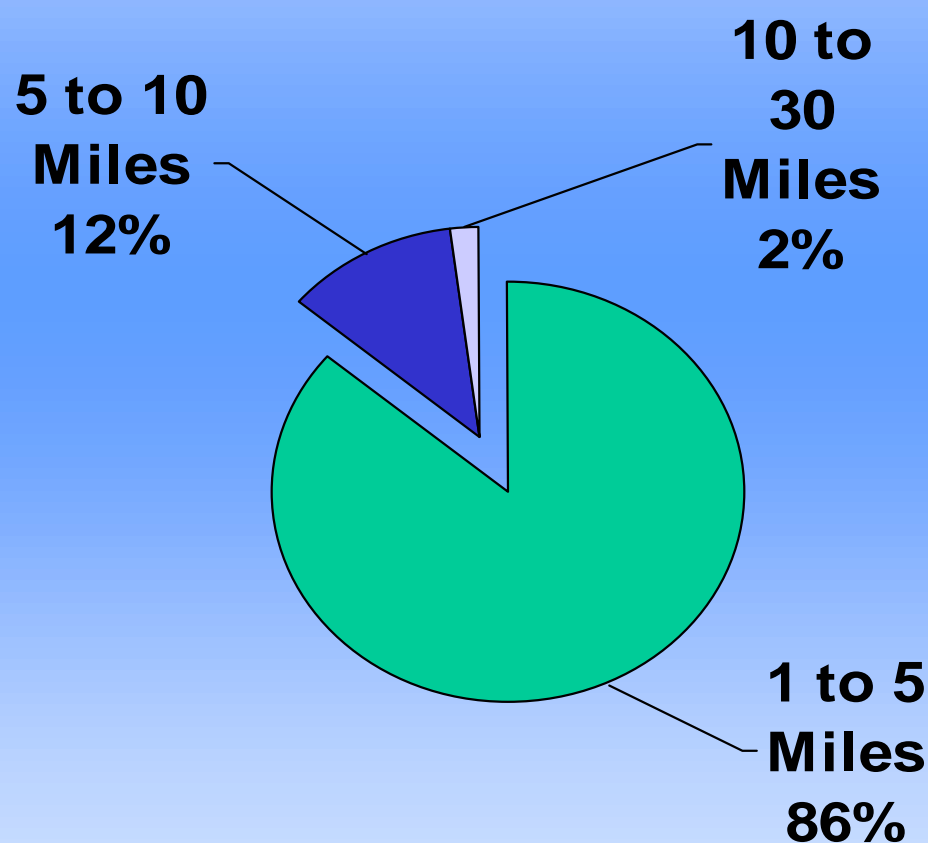


5 Major System Size Categories:
Percent of Systems Vs. Percent of Population Served



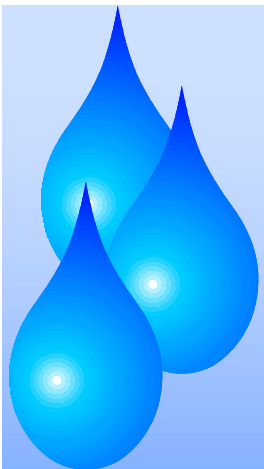


Distance to the Next Closest CWS

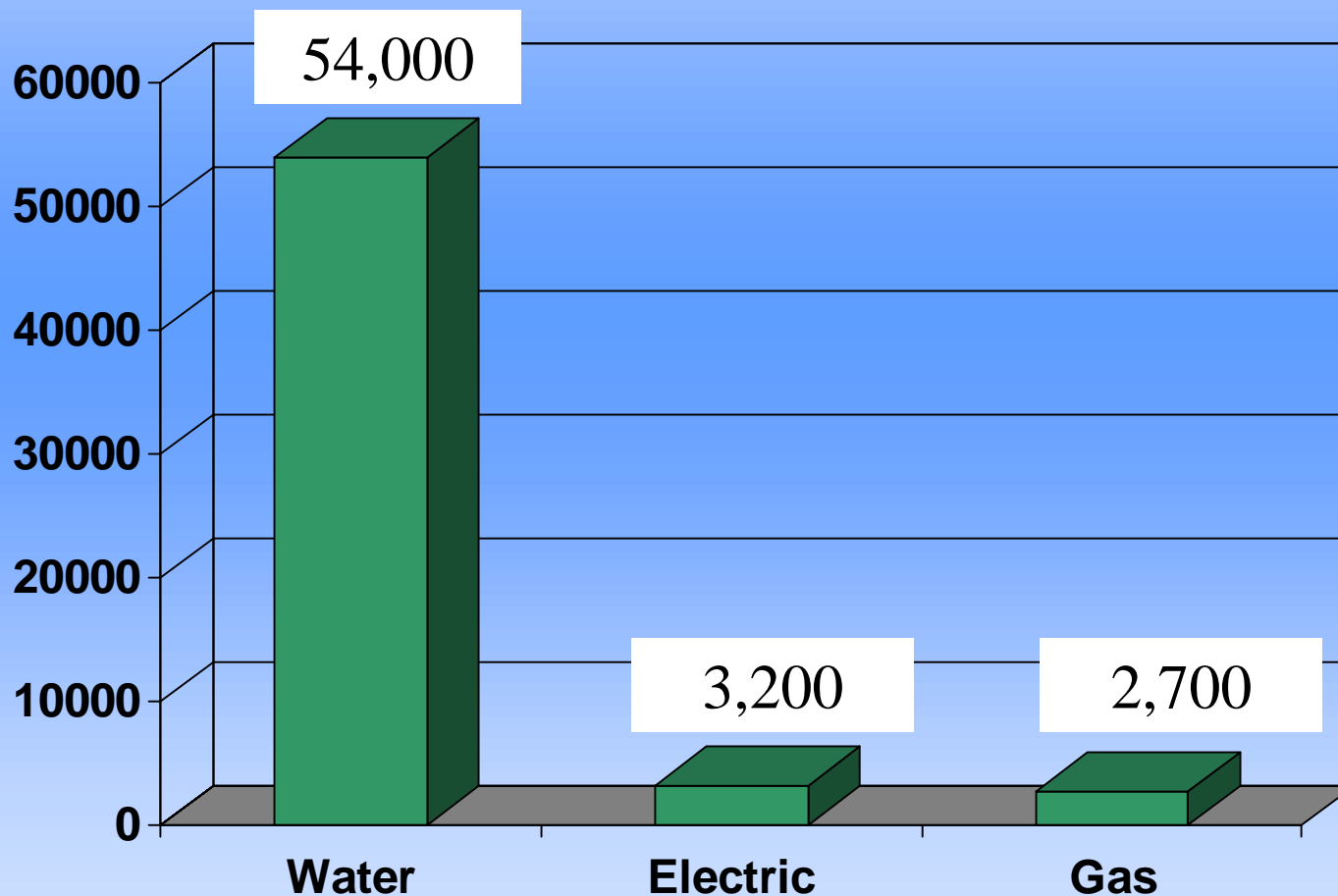


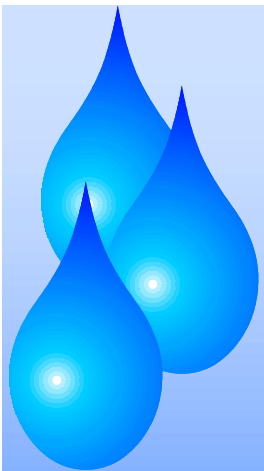
- **86% of Small Systems Are within 5 Miles of Another System**
- **100% of Small Systems Are within 20 Miles of Another System**

Weighted Average of 17 States



Utility Sectors Compared:
Number of Providers





Industry Assets and Needs

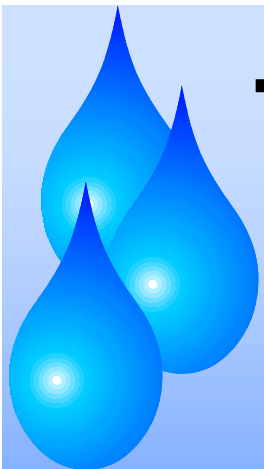
1999 \$



Assets \$144.2 B

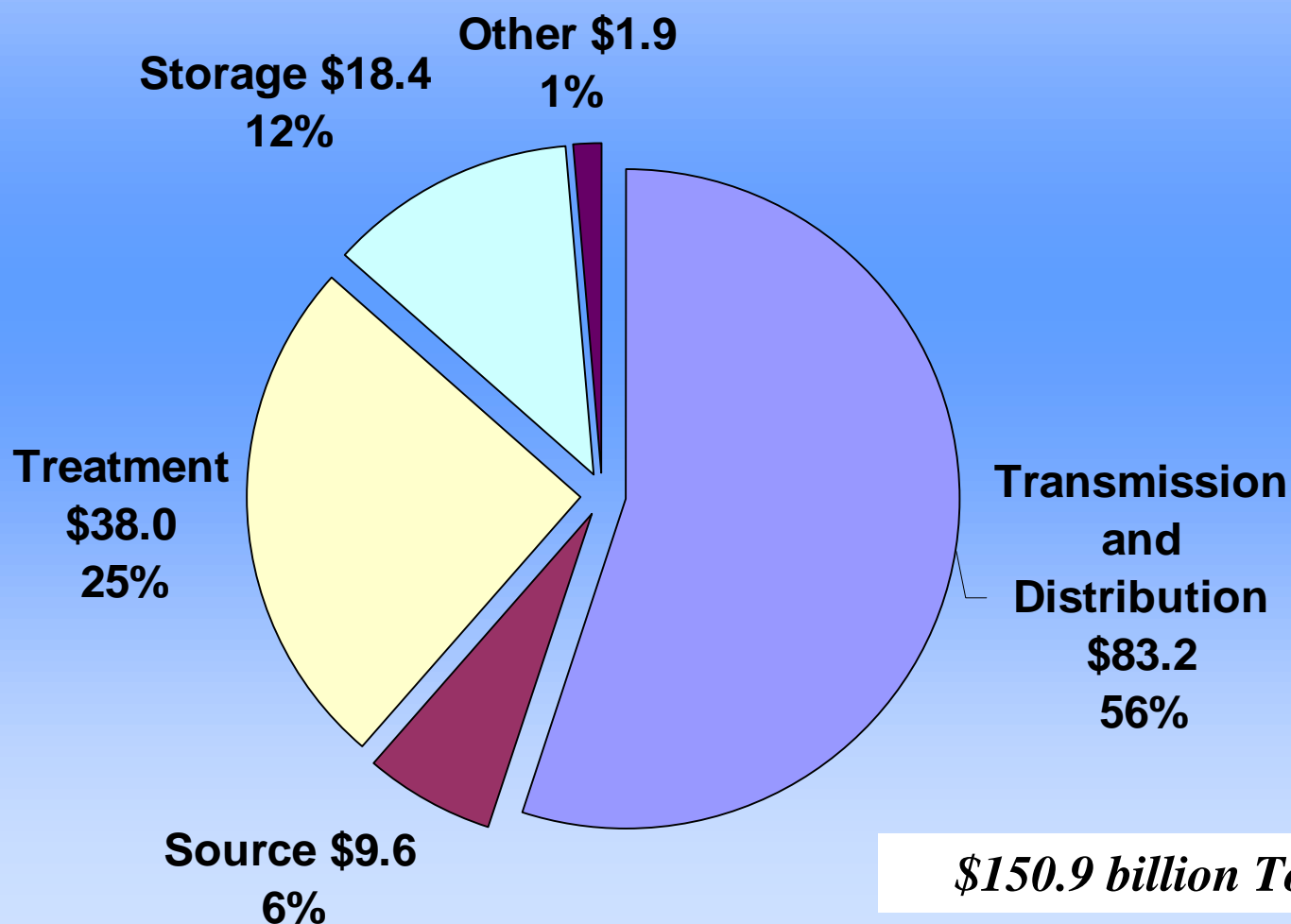


20-Year Need \$150.9 B



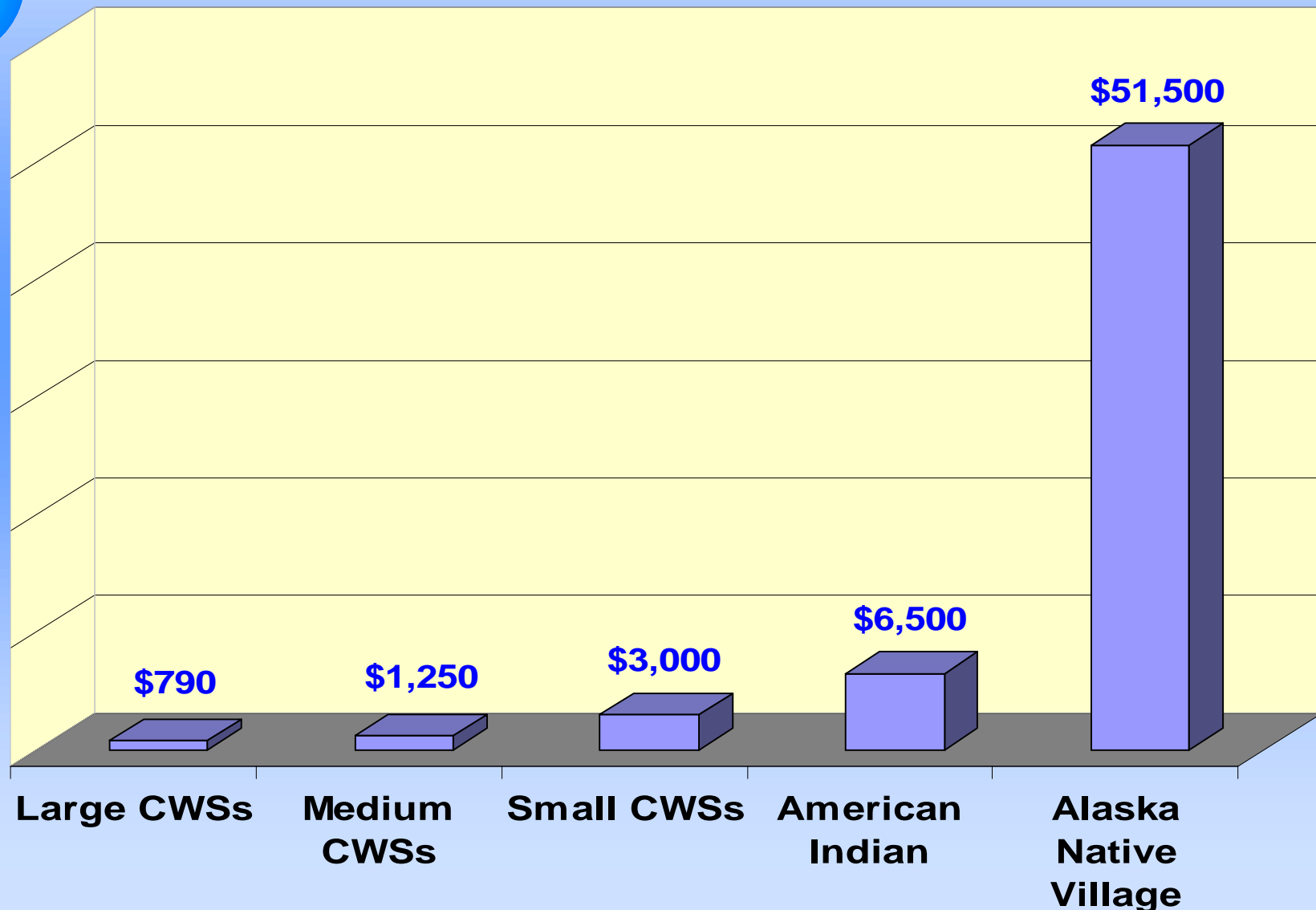
Total 20-Year Need by Category

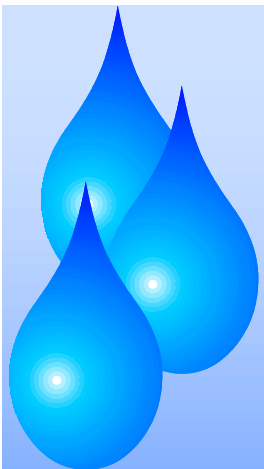
(in billion January 1999 dollars)





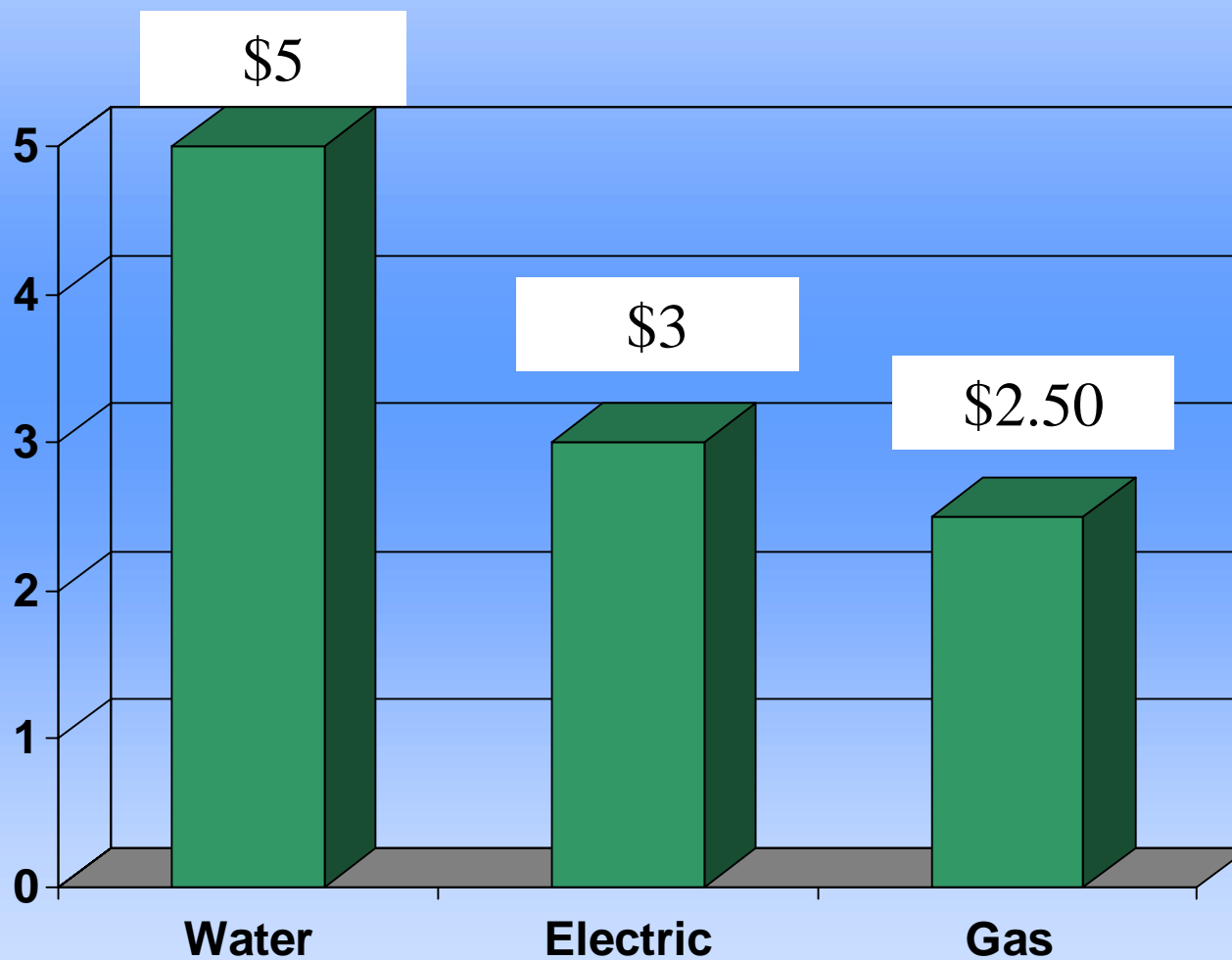
Average 20-Year Need per Household (*in January 1999 dollars*)



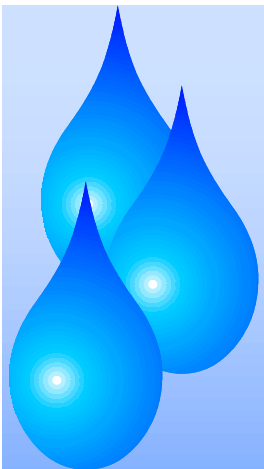


Utility Sectors Compared:

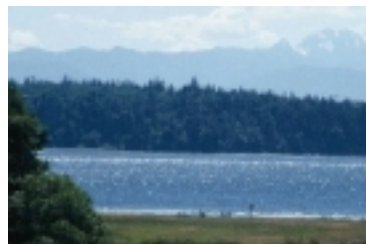
Capital Intensity



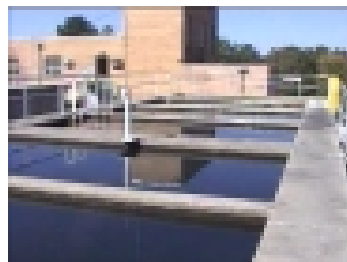
Total
Plant/Revenue



Identifying Least-Cost Solutions



**Source
Protection**

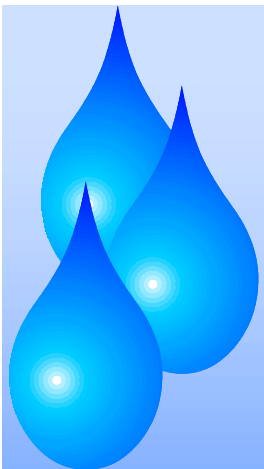


Treatment

**Upstream “Investment” to
Control Source Quality**

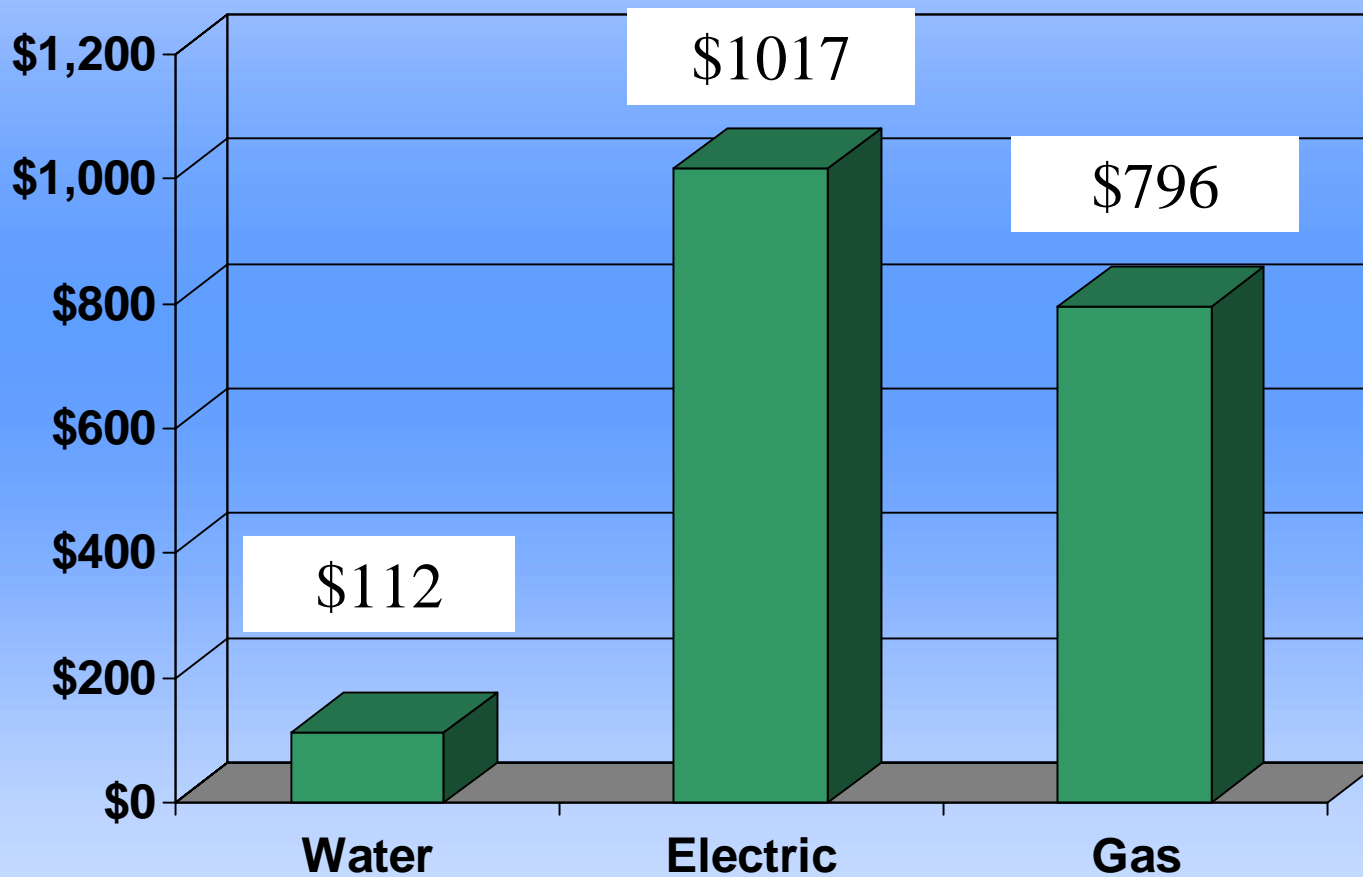
Vs.

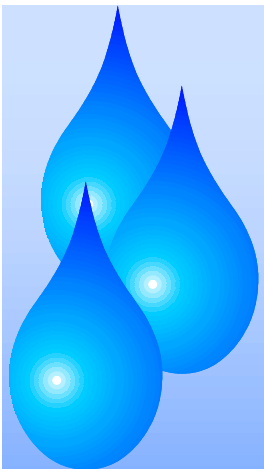
**Treatment to Remove
Contaminants**



The Shanaghan Household:

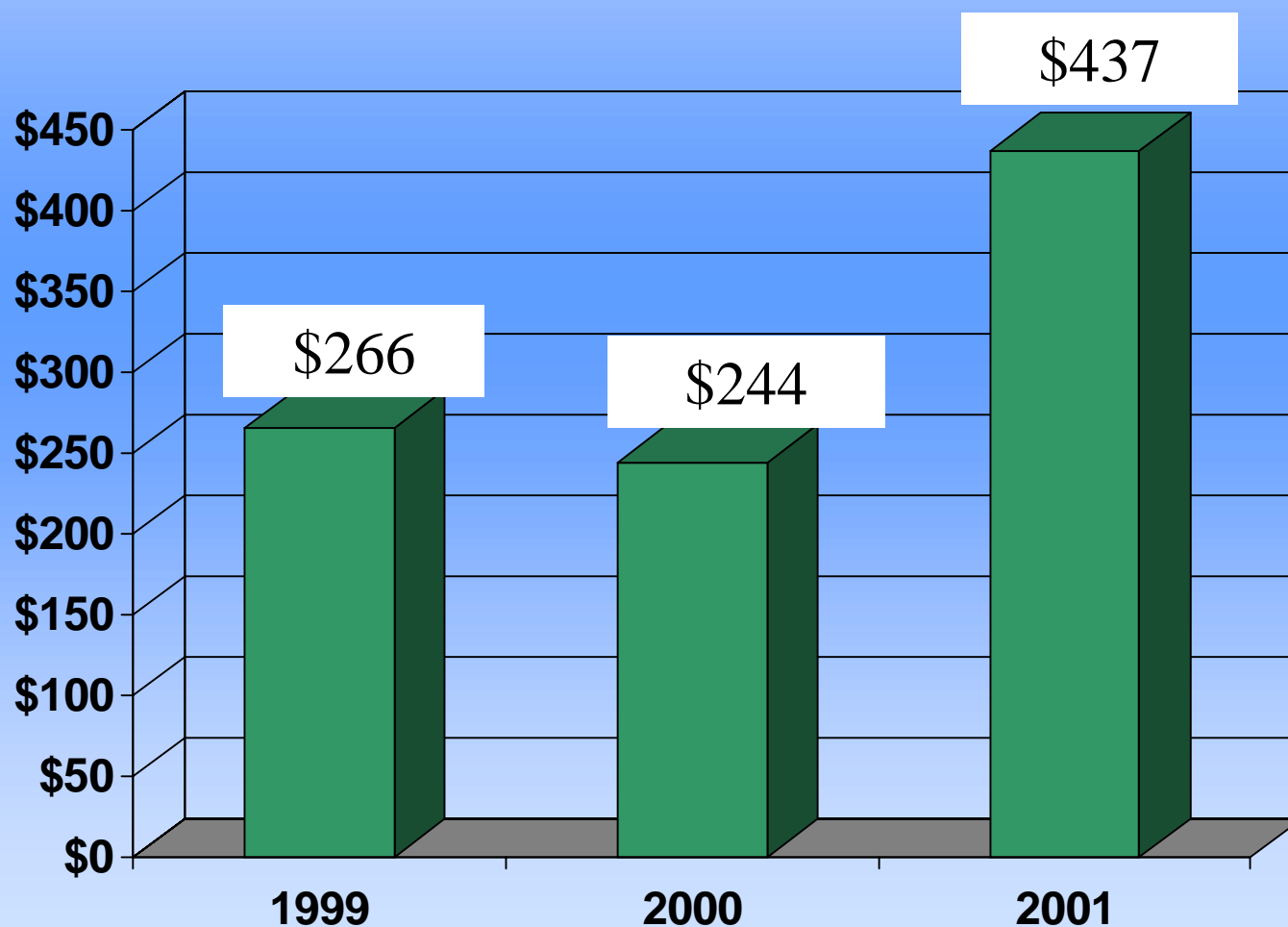
2000 Utility Costs



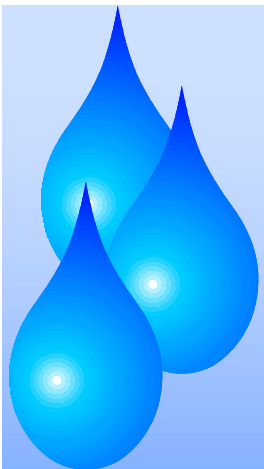


The Shanaghan Household Experiences Rate Shock:

Natural Gas for January & February, 1999-2001

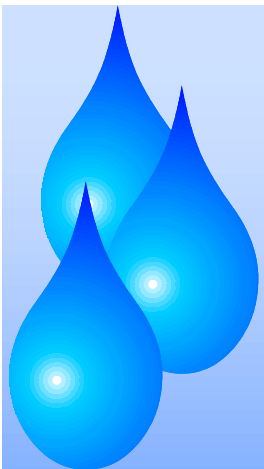


**71%
Increase!!!**



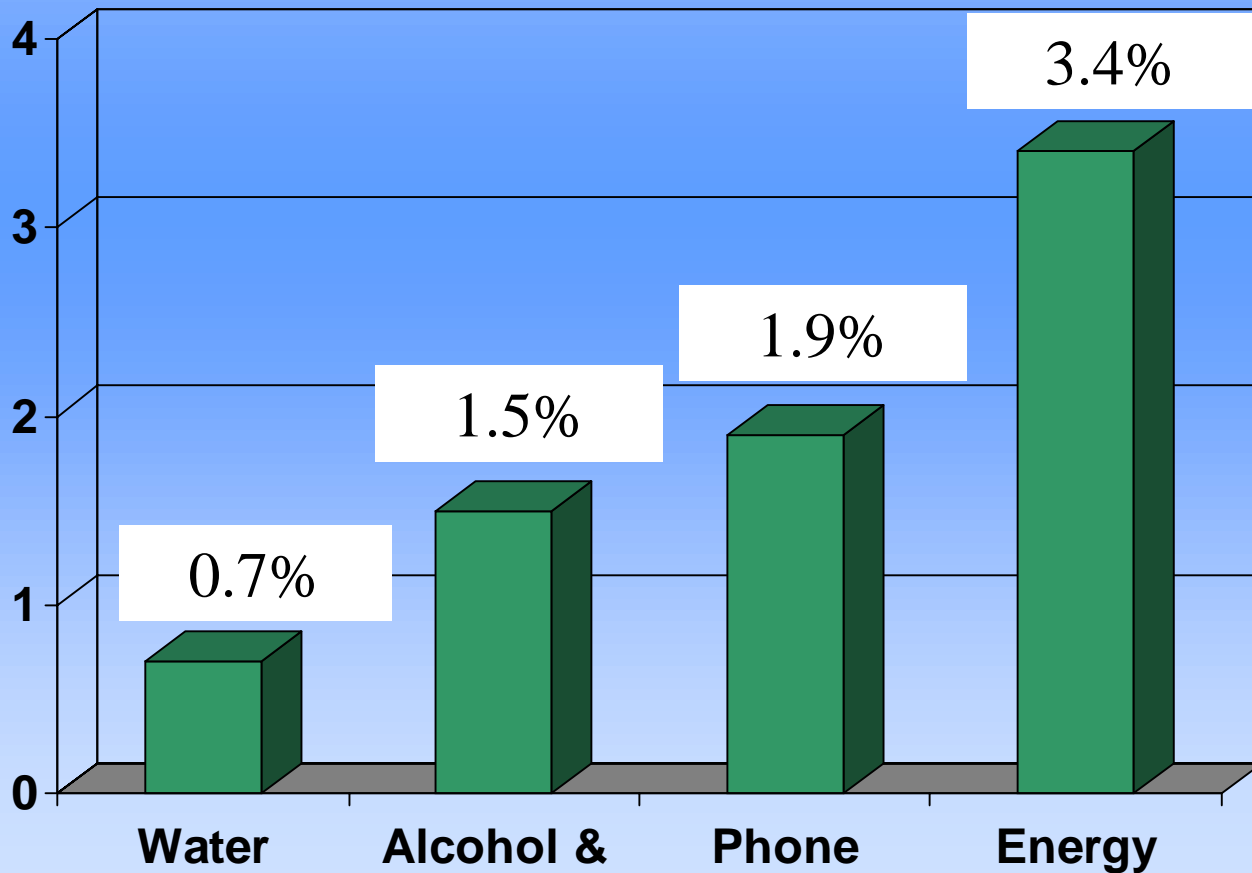
How Does My Water Bill Compare?

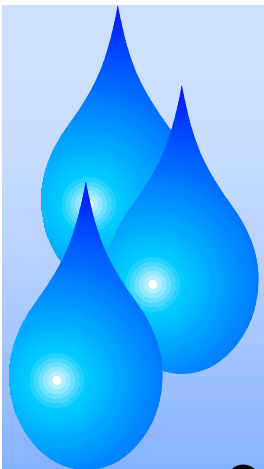
- Average for 27 Major US Cities: \$201.59
- Range \$110.64 - \$311.37
- My Bill \$111.80



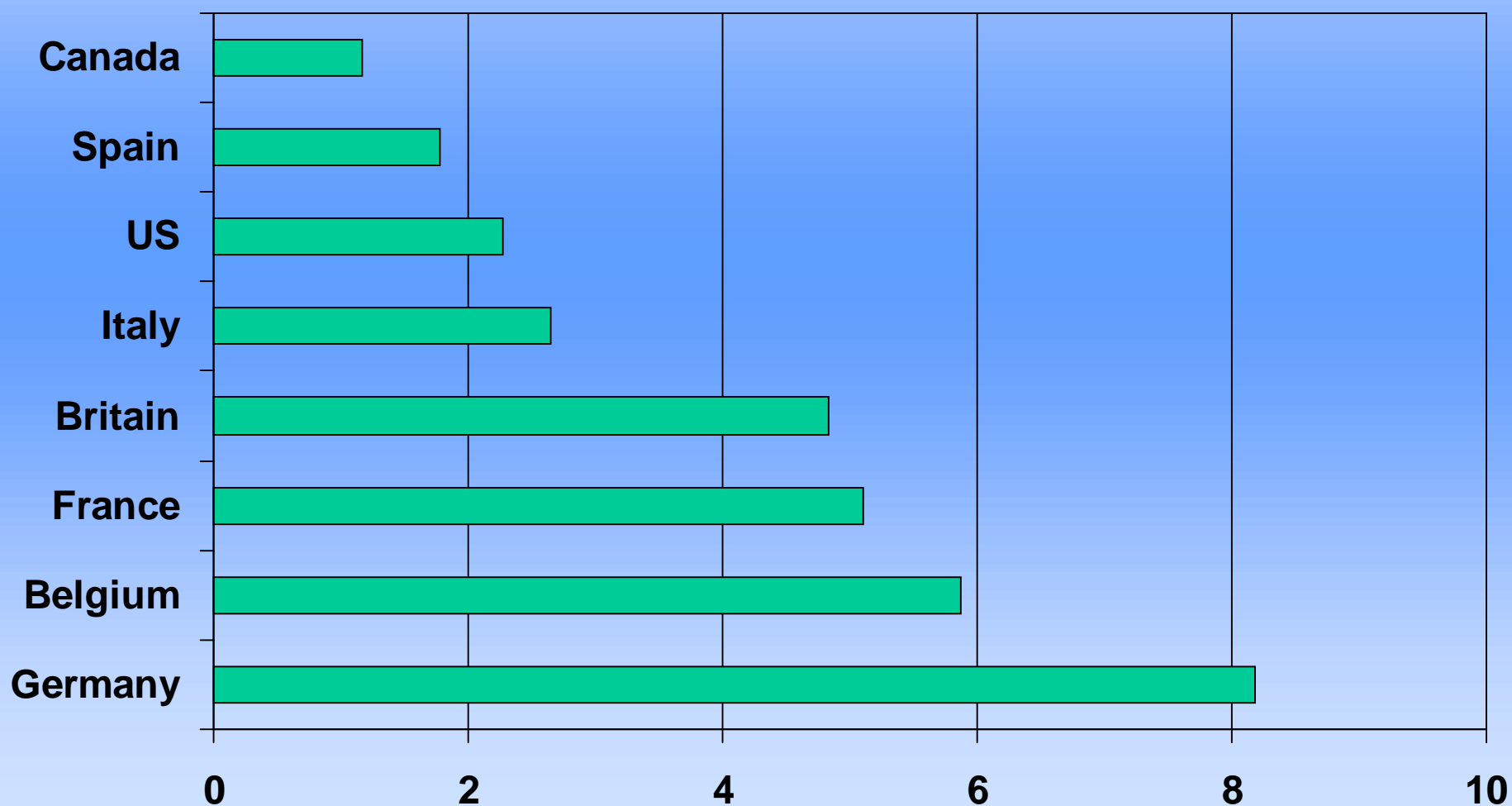
Household Expenditures Compared

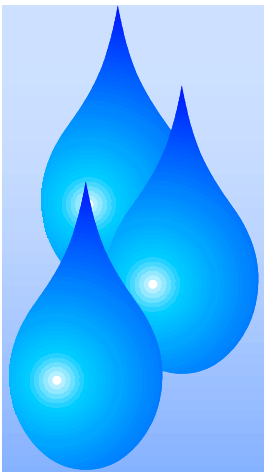
Percent
of MHI





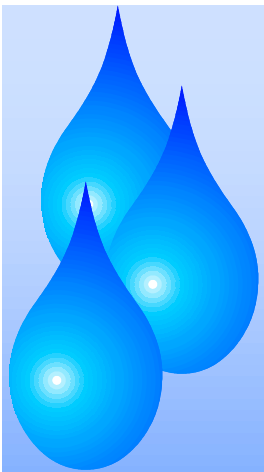
**US Water Rates vs. Rates in Other
Western Countries**
\$/1000 gallons





Economist's Perspective I

- **Historic Underpricing**
- **Incorrect Price Signal=Inefficient Use**
- **Inefficiencies in Industry Structure**



Economist's Perspective II

- **Lumpy Investments**
- **All Costs are Variable in the Long Term**
 - **Is Now the Long Term????**



Achieving Economic Efficiency



**Operational
Efficiency**

**Progressive
Rate Design**

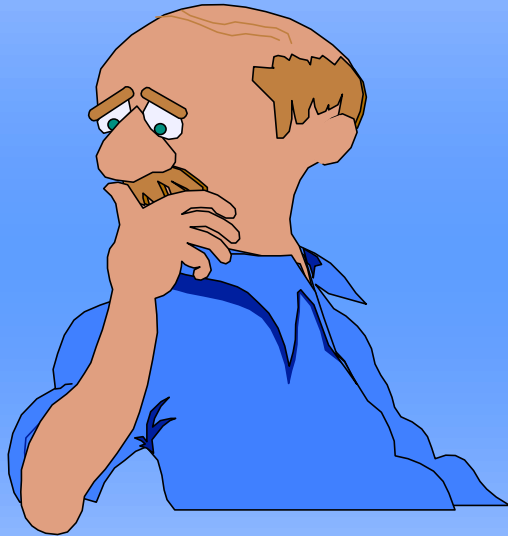
Restructuring

Full Cost Pricing



The Changing Customer

Old



- **Ratepayer**
- **Recipient of service**

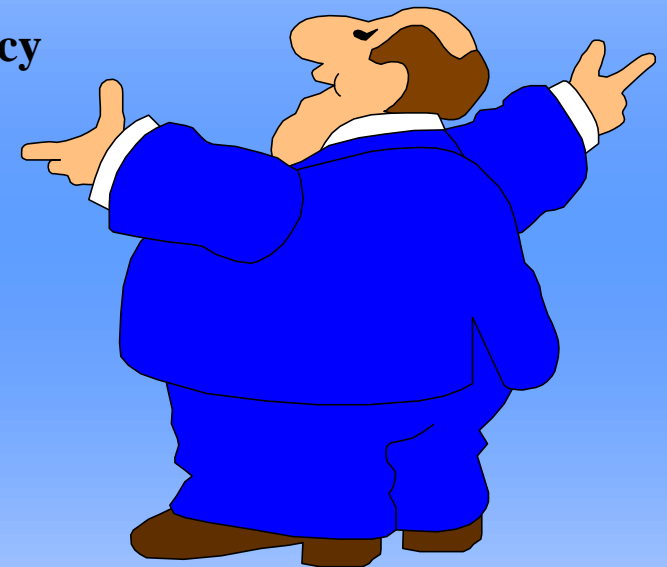
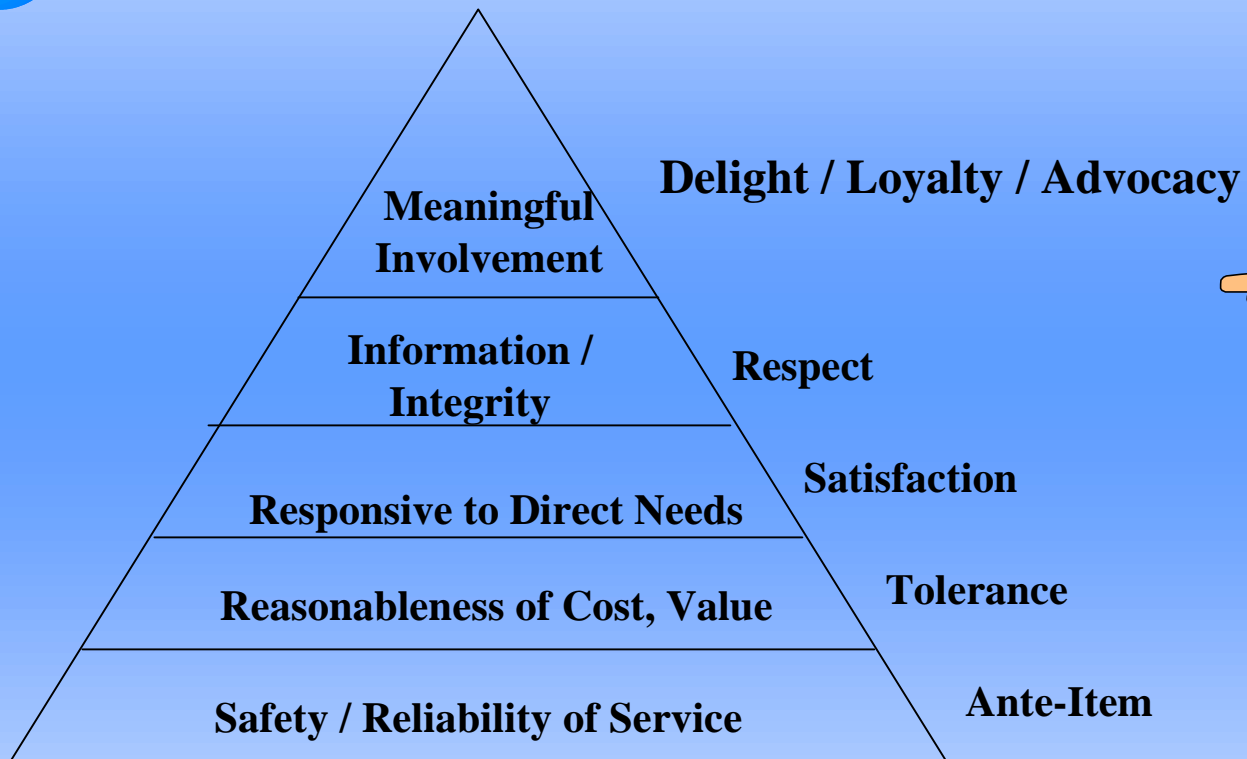
New



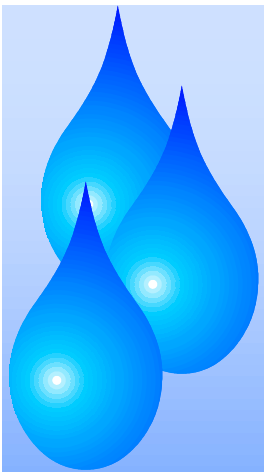
- **Customer**
- **Purchaser of Service**



Customers Can Be Advocates!!!



Source: Alan Manning, EMA Inc., AWWA/WEF Joint Mgt. Conf. 2001



Strategic Planning: The Foundation for Success



**Source
Protection**



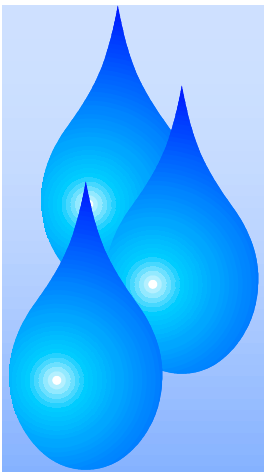
Treatment



Distribution



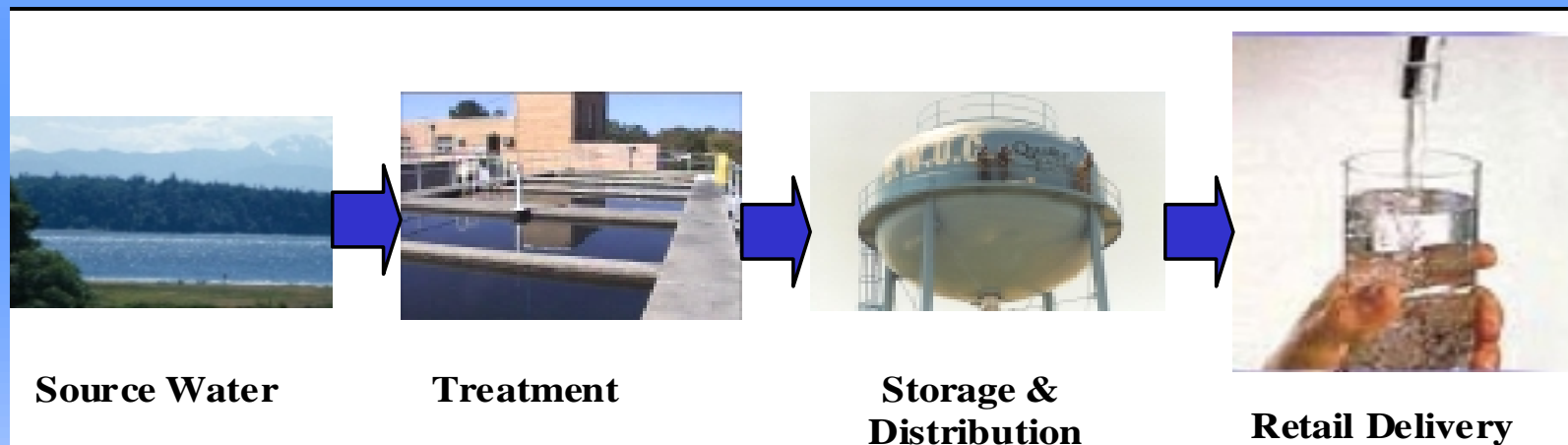
**Informed
Customer**



Strategic Planning: The Foundation for Success

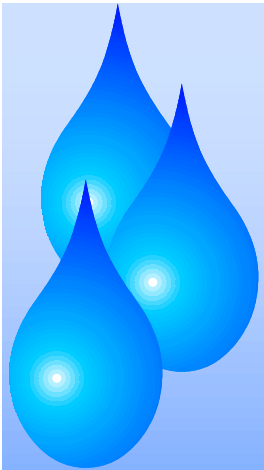
Internal Assessment

- Strengths
- Weaknesses



External Assessment

- Challenges
- Opportunities



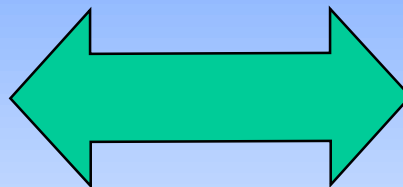
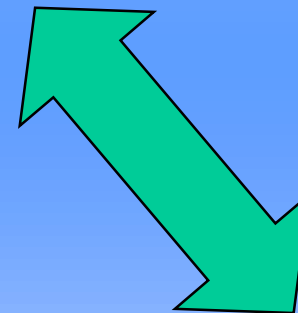
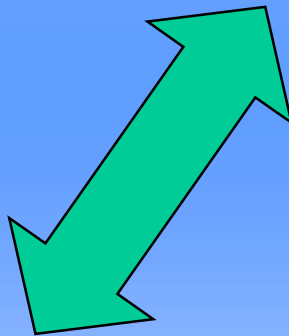
Achieving Sustainability

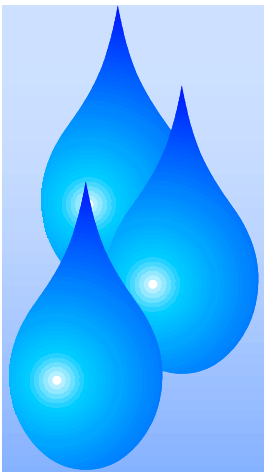
Strategic Planning

Sustainable
Systems

Full-Cost Pricing

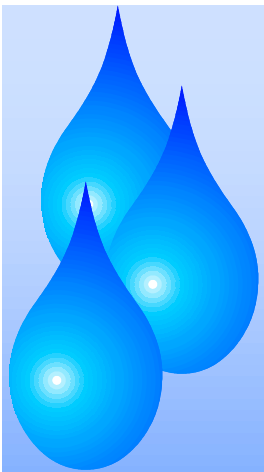
Optimizing Organization
& Operations





Summary

- **Enhancing Public Health Protection**
- **Achieving Economic Efficiency**
- **Engaging Customers as Partners**
- **Planning for Sustainability**



For Additional Information

- www.epa.gov/safewater
- shanaghan.peter@epa.gov
- 202-260-5813